



IN THE UNITED STATES PATENT & TRADEMARKS OFFICE

APPLICANT: Bruening et al.

SERIAL NO.: 10/664,045

FILED: 9/16/03

FOR: COMPOSITIONS AND METHODS  
FOR SEPARATING AMINES AND  
AMINO ACIDS FROM THEIR  
COUNTER-ENANTIOMERS

ATTORNEY DOCKET NO. 21058.NP

**INFORMATION DISCLOSURE  
STATEMENT UNDER  
37 C.F.R. § 1.97**

**CERTIFICATE OF MAILING  
UNDER 37 C.F.R. § 1.8**

DATE OF DEPOSIT: 12/5/03

I hereby certify that this paper or fee (along with any paper or fee referred to as being attached or enclosed) is being deposited with the United States Postal Service as first-class mail with sufficient postage on the date indicated above and is addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

*Emily Megham*  
Emily Megham

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir/Madam:

Please find, pursuant to 37 C.F.R. § 1.98(a)(1), the enclosed Form PTO-1449 which contains a list of all patents, publications, or other items that have come to the attention of one or more of the individuals designated in 37 C.F.R. § 1.56(c). Applicant respectfully submits that this Information Disclosure Statement is filed pursuant to:

☒ 37 C.F.R. § 1.97 (b)(1) or (3), within three months of the filing date of the application, or before a first office action on the merits, whichever occurs last;

☐ 37 C.F.R. § 1.97 (c), after a first office action on the merits, but before a Final Office Action or a Notice of Allowance, whichever occurs first, and is accompanied by either 1) a statement in accordance with 37 C.F.R. § 1.97(e), or 2) the fee set forth in § 1.17(p); or

☐ 37 C.F.R. § 1.97 (d), after a Final Office Action or Notice of Allowance, whichever occurs first, but on or before payment of the issue fee, and is accompanied by both 1) a statement in accordance with 37 C.F.R. § 1.97(e), and 2) the fee set forth in § 1.17(p).

While no representation is made that any of these references may be "prior art" within the meaning of that term in accordance with 35 U.S.C. §§ 102 or 103, the enclosed list of references is disclosed so as to comply with the duty of disclosure set forth in 37 C.F.R. § 1.56.

Moreover, while no representation is made that a specific search of office files or patent office records has been conducted or that no better art exists, the undersigned attorney of record believes that the references listed, together with any other references which may have been previously submitted or listed, are the closest to the claimed invention (taken in its entirety) of which the undersigned is presently aware, and no art which is closer to the claimed invention (taken in its entirety) has been knowingly withheld.

In accordance with 37 C.F.R. §§ 1.97 and 1.98, a copy of each listed reference (or relevant portion thereof) which was not previously submitted to, or cited by, the Patent Office is also enclosed.

For all listed references that are not either in the English language, or accompanied by a translation into English, a concise explanation of relevance as required under 37 C.F.R. § 1.98(a)(3) is enclosed attached to each.

Please charge any additional fees or credit any overpayment to Deposit Account No. 20-0100.

Dated this 5<sup>th</sup> day of December, 2003.

Respectfully submitted,



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MWW/GPO/em

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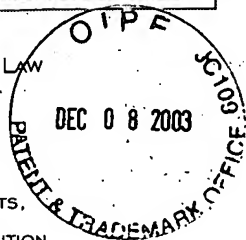
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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

**TRANSMITTAL OF INFORMATION DISCLOSURE STATEMENT**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Re: U.S. Patent Application No. 10/664,045, Filed 9/16/03  
Inventor(s): Bruening et al.

**COMPOSITIONS AND METHODS FOR SEPARATING AMINES AND  
AMINO ACIDS FROM THEIR COUNTER-ENANTIOMERS**

Attorney Docket No. 21058.NP

Dear Sir/Madam:

Transmitted herewith for filing and pursuant to 37 C.F.R. §§ 1.56 and 1.97 is an  
Information Disclosure Statement.

Enclosed also are the following designated documents, as required under 37 C.F.R. §§  
1.97 and 1.98:

- ☒ Form PTO-1449 list of 31 reference(s) submitted for consideration.
- ☒ Legible copies of the listed references or their relevant portions.
- ☐ All English translations of each non-English reference, if any, within the  
possession, custody, control or availability of anyone designated in 37 C.F.R. §  
1.56(c) (see 37 C.F.R. § 1.98(c)).

The following are included within the Information Disclosure Statement if applicable and as required under 37 C.F.R. § 1.98:

- ☐ Concise explanation of relevance of each reference not in English and unaccompanied by an English translation.
- ☐ Statement that certain listed references not enclosed are substantially cumulative of an enclosed reference.
- ☐ Statement that certain listed references not enclosed were previously cited by or submitted to the Office in the identified prior application which is relied upon for an earlier filing date under 35 U.S.C. § 120.

In order to secure consideration of the items designated above, one or more of the following, if required, is also enclosed:

- ☐ Statement under 37 C.F.R. § 1.97(e)(1) or (2).
- ☐ Check No. \_\_\_\_\_ in the amount of \$180.00 (amount in § 1.17(p)) constituting the submission fee set forth in 37 C.F.R. § 1.17(p).

In the event that 37 C.F.R. § 1.97(c) applies and the Examiner is not satisfied that the Statement meets the requirements of 37 C.F.R. § 1.97(e), or in any other event remediable by a fee, please credit any over payment or charge any additional fees to Deposit Account No. 20-0100 of the undersigned.

Dated this 5<sup>th</sup> day of December, 2003.

Respectfully submitted,



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Enclosures



PTO-1449

U.S. DEPARTMENT OF COMMERCE  
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21058.NPSERIAL NO.  
10/664,045

## LIST OF PRIOR ART CITED BY APPLICANT

APPLICANT Bruening et al.

FILING DATE  
9/16/03

GROUP

## U.S. PATENT DOCUMENTS

EXAMINER INITIALS		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	A1	4,001,279	Jan 4, 1977	Cram			
	A2	4,043,979	Aug 23, 1977	Cram			
	A3	4,943,375	Jul 24, 1990	Bradshaw, et al.			
	A4	4,952,321	Aug 28, 1990	Bradshaw, et al.			
	A5	4,959,153	Sep 25, 1990	Bradshaw, et al.			
	A6	4,960,882	Oct 2, 1990	Bradshaw, et al.			
	A7	5,039,419	Aug 13, 1991	Bradshaw et al.			
	A8	5,071,819	Dec 10, 1991	Tarbet, et al.			
	A9	5,078,978	Jan 7, 1992	Tarbet, et al.			
	A10	5,084,430	Jan 28, 1992	Tarbet, et al.			
	A11	5,173,470	Dec 22, 1992	Bruening, et al.			
	A12	5,179,213	Jan 12, 1993	Bradshaw, et al.			
	A13	5,182,251	Jan 26, 1992	Bruening, et al.			
	A14	5,190,661	Mar 2, 1993	Bruening, et al.			
	A15	5,244,856	Sep 14, 1993	Bruening, et al.			
	A16	5,273,660	Dec 28, 1993	Bruening, et al.			
	A17	5,393,892	Feb 28, 1995	Krakowiak, et al.			

## FOREIGN PATENT DOCUMENTS

EXAMINER INITIALS		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION YES NO

## OTHER PRIOR ART (Including Author, Title, Pertinent Pages, Etc.)

	A18	Armstrong, Daniel W., et al., <i>CAPILLARY ELECTROPHORETIC ENANTIOSEPARATIONS USING MACROCYCLIC ANTIBIOTICS AS CHIRAL SELECTORS</i> , Electrophoresis, 1997, 18, pp. 2331-2342
	A19	Armstrong, Daniel W., et al.; <i>MACROCYCLIC ANTIBIOTICS AS A NEW CLASS OF CHIRAL SELECTORS FOR LIQUID CHROMATOGRAPHY</i> ; Analytical Chemistry, Vol. 66, No. 9, May 1, 1994; pp. 1473-1484
	A20	Armstrong, Daniel W., <i>OPTICAL ISOMER SEPARATION BY LIQUID CHROMATOGRAPHY</i> ; Analytical Chemistry, Vol. 59, No. 2, Jan. 15, 1987; pp. 84A-91A.
	A21	Bradshaw, Jerald S., et al.; <i>ENANTIOMERIC RECOGNITION OF ORGANIC AMMONIUM SALTS BY CHIRAL DIALKYL-DIALKENYL-, AND TETRAMETHYL-SUBSTITUTED PYRIDINO-18-CROWN-6 AND TETRAMETHYL-SUBSTITUTED BIS-PYRIDINO-18-CROWN-6 LIGANDS: COMPARISON OF TEMPERATURE-DEPENDENT <sup>1</sup>H NMR AND EMPIRICAL FORCE FIELD TECHNIQUES<sup>1</sup></i> ; The Journal of Organic Chemistry, 1990, Vol. 55; pp. 3129-3137.

PTO-1449

U.S. DEPARTMENT OF COMMERCE  
PATENT AND TRADEMARK OFFICEATTY. DOCKET NO.  
21058.NPSERIAL NO.  
10/664,045

## LIST OF PRIOR ART CITED BY APPLICANT

APPLICANT Bruening et al.

FILING DATE  
9/16/03

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A22	Koshiishi, Ichiro, et al., <i>SIMULTANEOUS DETERMINATION OF VITAMIN C AND ITS CARBAMYLATED DERIVATIVES BY HIGH-PERFORMANCES LIQUID CHROMATOGRAPHY WITH POST-COLUMN DERIVITIZATION</i> , Journal of Chromatography, 806 (1998) 340-344
A23	Kostrowicki, J., et al.; <i>MACROCYCLIC POLYFUNCTIONAL LEWIS BASES</i> ; Journal of Chromatography, 454 (1988) 340-344
A24	P. Huszthy, et al., <i>ENANTIOMERIC SEPARATION OF CHIRAL [A-(1-NAPHTHYL)ETHYL]AMMONIUM PERCHLORATE BY SILICA GEL-BOUND CHIRAL PYRIDINO-18-CROWN-6 LIGANDS</i> , Models in Chemistry 131 (3-4), pp. 445-454 (1994)
A25	Pirkle, WH, et al. <i>CHIRAL STATIONARY PHASES FOR THE DIRECT LC SEPARATION OF ENANTIOMERS</i> ; Advances in Chromatography, 1987;27:73-127
A26	Pirkle, WH, et al.; <i>CONSIDERATIONS OF CHIRAL RECOGNITION RELEVANT TO THE LIQUID CHROMATOGRAPHIC SEPARATION OF ENANTIOMERS</i> ; Chem Rev., 1989, 89: 347-362
A27	Sogah, G. Dotsevi Yao, et al., <i>CHROMATOGRAPHIC OPTICAL RESOLUTION THROUGH CHIRAL COMPLEXATION OF AMINO ESTER SALTS BY A HOST COVALENTLY BOUND TO SILICA GEL</i> , Journal of the American Chemical Society, 1975, 97:5, pp. 1259-1261
A28	Sogah, G. Dotsevi Yao, et al., <i>HOST-GUEST COMPLEXATION. 14. HOST COVALENTLY BOUND TO POLYSTYRENE RESIN FOR CHROMATOGRAPHIC RESOLUTION OF ENANTIOMERS OF AMINO ACID AND ESTER SALTS</i> , Journal of the American Chemical Society, 1979, 101, pp. 3035-3042
A29	Sogah, G. Dotsevo Yao, et al., <i>TOTAL CHROMATOGRAPHIC OPTICAL RESOLUTIONS OF <math>\alpha</math>-AMINO ACID AND ESTER SALTS THROUGH CHIRAL RECOGNITION BY A HOST COVALENTLY BOUND TO POLYSTYRENE RESIN</i> , Journal of the American Chemical Society, 1976, 98:10, pp. 1262-1265
A30	Taylor, Edward C., et al., <i>S-ALKYLATION AND S-ACYLATION OF THE THIOCARBONYL LIGAND IN METAL COMPLEXES</i> , Journal of the American Chemical Society, 1976, 98:10, pp. 1261-1262
A31	Zhang, et al.; <i>ENANTIOMERIC RECOGNITION OF AMINE COMPOUNDS BY CHIRAL MACROCYCLIC RECEPTORS</i> ; Chemical Reviews, 1997, 97, 3313-3361.

EXAMINER

DATE CONSIDERED

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication with applicant.